## Exhibit 4

## Invalidity Claim Chart for U.S. Patent No. 5,544,352 OF CERTAIN EXEMPLARY COMBINATIONS

Each reference identified as anticipatory of any claim herein in Defendants' P. R. 3-3 Disclosure also renders such claim obvious alone and in view of any of the one or more other references as identified in the chart below. In addition, combinations of two or more of the references identified in the chart below render the claims obvious.

26. A non-semantical method for numerically representing objects in a computer database and for computerized searching of the numerically represented objects in the database, wherein direct and indirect relationships exist between objects in the database, wherein direct and indirect relationships exist between objects in the database, comprising:  Salton, 1971;Garfield, 1979;Fox/Smart, 1983;Fox Collections, 1983;Fox Thesis, 1983;Fox, 1988;Thompson, 1989;Kommers, 1990;Nielsen, 1990;Dierk, 1991;Durlop, 1991;Turtle, 1991;Purlop, 1991;Shaw Part II, 1991;Bahaw Part II, 1991;Piralia, 1993;Balton, 1983;Balton, 1980;Balton, 1980;Balt		
marked object may be individually identified by a computerized search;  Thesis, 1983;Fox, 1984;Fox, 1985;Armstrong, 1988;Cost, 1989;Croft, Lucia, 1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle & Croft, 1991;Shaw Part I, 1991;Shaw Part II, 1991;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger, 1992;Shimko, 1974;Bichteler & Eaton, 1977;Salton, 1970;Salton and McGill, 1983;Salton, 1968;Tapper, 1982;Frisse, 1988;Salton, 1963;Kochtanek, 1982;Gelbart, 1991;Croft, 1993;Goffman, 1969;Pinski, 1976;Garner, 1967;Alain, 1992;Shepherd, 1990;Guinan, 1992;Salton, 1988;Nielsen, 1990;Burt, 1991;Lucarella, 1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew, 1986;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada 1991;Intermedia;Chen Thesis, 1992;ENVISION;SMART  Kessler, 1967;Salton, 1971;Garfield, 1979;Fox/Smart, 1983;Fox Collections, 1983;Fox Thesis, 1983;Fox, 1984;Fox, 1985;Armstrong, 1988;Fox, 1986;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins, 1989;Turtle, 1991;Turtle & Croft, 1991;Shaw Part I, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger,	representing objects in a computer database and for computerized searching of the numerically represented objects in the database, wherein direct and indirect relationships exist between objects in the database, comprising:	1984;Fox, 1985;Armstrong, 1988;Fox, 1988;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle & Croft, 1991;Shaw Part I, 1991;Shaw Part II, 1991;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger, 1992;Shimko, 1974;Bichteler & Eaton, 1977;Salton, 1970;Salton and McGill, 1983;Salton, 1968;Tapper, 1982;Frisse, 1988;Salton, 1963;Kochtanek, 1982;Gelbart, 1991;Croft, 1993;Goffman, 1969;Pinski, 1976;Garner, 1967;Botafogo, 1992;Alain, 1992;Shepherd, 1990;Schiminovich, 1971;Guinan, 1992;Salton, 1988;Nielsen, 1990;Burt, 1991;Lucarella, 1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew, 1986;Salton, 1975;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada, 1991;Intermedia;Chen Thesis, 1992;Weiss, 1996; ENVISION;SMART
1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle, 1991;Shaw Part I, 1991;Shaw Part II, 1991;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger, 1992;Shimko, 1974;Bichteler & Eaton, 1977;Salton, 1970;Salton and McGill, 1983;Salton, 1968;Tapper, 1982;Frisse, 1988;Salton, 1963;Kochtanek, 1982;Gelbart, 1991;Croft, 1993;Goffman, 1969;Pinski, 1976;Garner, 1967;Alain, 1992;Shepherd, 1990;Guinan, 1992;Salton, 1988;Nielsen, 1990;Burt, 1991;Lucarella, 1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew, 1986;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada 1991;Intermedia;Chen Thesis, 1992;ENVISION;SMART  [26b] creating a first numerical representation for each identified object in the database based upon the object's direct relationship with other objects in the database;  Kesler, 1967;Salton, 1971;Garfield, 1979;Fox/Smart, 1983;Fox Collections, 1983;Fox 1983;Fox, 1984;Fox, 1985;Armstrong, 1988;Fox, 1986;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1992;Salton, 1992;Belew, 1980;U.S. Pat. No. 5,446,891;Rose, 1991;Intermedia;Chen Thesis, 1992;Elev, 1991;Fox/Smart, 1998;Fox Collections, 1974;Rada 1991;Intermedia;Chen Thesis, 1992;Fox/Smart, 1983;Fox Collections, 1983;Fox 1983;Fox 1983;Fox 1983;Fox 1983;Fox 1983;Fox 1983;Fox 1989;Croft, 1989;Croft, 1989;Croft, 1989;Croft, 1999;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle, 2 Croft, 1991;Shaw Part II, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger,	marked object may be individually identified by a	
1991; Duniop, 1991; Turtile, 1991; Turtile & Croit, 1991; Shaw Part II, 1991; Betrabet, 1993; Brunei, 1993; Bourne and Hahn, 2003; TIP; Frei & Steiger, 1992; Shimko, 1974; Bichteler & Eaton, 1977; Salton, 1970; Salton and McGill, 1983; Salton, 1968; Tapper, 1982; Frisse, 1988; Salton, 1963; Kochtanek, 1982; Gelbart, 1991; Croft, 1993; Goffman, 1969; Pinski, 1976; Garner, 1967; Alain, 1992; Shepherd, 1990; Guinan, 1992; Salton, 1988; Nielsen, 1990; Burt, 1991; Lucarella, 1990; U.S. Pat. No. 5,446,891; Rose, 1989; UCINET, 1992; Belew, 1986; Rose, 1991; Pirolli, 19996; Bichteler & Parsons, 1974; Rada 1991; Intermedia; Chen Thesis, 1992; ENVISION; SMART  [26b] creating a first numerical representation for each identified object in the database based upon the object's direct relationship with other objects in the database;  Kessler, 1967; Salton, 1971; Garfield, 1979; Fox/Smart, 1983; Fox Collections, 1983; Fox Thesis, 1983; Fox, 1984; Fox, 1985; Armstrong, 1988; Fox, 1988; Croft, Lucia, 1989; Frisse/Cousins, 1989; Thompson, 1989; Kommers, 1990; Nielsen, 1990; Berk, 1991; Dunlop, 1991; Turtle, 1991; Turtle & Croft, 1991; Shaw Part II, 1991; Chen, 1992; Betrabet, 1993; Brunei, 1993; Bourne and Hahn, 2003; TIP; Frei & Steiger,		1989; Frisse/Cousins, 1989; Thompson, 1989; Kommers, 1990; Nielsen, 1990b; Berk,
1974;Bichteler & Eaton, 1977;Salton, 1970;Salton and McGill, 1983;Salton, 1968;Tapper, 1982;Frisse, 1988;Salton, 1963;Kochtanek, 1982;Gelbart, 1991;Croft, 1993;Goffman, 1969;Pinski, 1976;Garner, 1967;Alain, 1992;Shepherd, 1990;Guinan, 1992;Salton, 1988;Nielsen, 1990;Burt, 1991;Lucarella, 1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew, 1986;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada 1991;Intermedia;Chen Thesis, 1992;ENVISION;SMART  [26b] creating a first numerical representation for each identified object in the database based upon the object's direct relationship with other objects in the database;  [26b] creating a first numerical representation for each identified object in the database based upon the object's direct relationship with other objects in the database;  [26b] creating a first numerical representation for each identified object in the database based upon the object's direct relationship with other objects in the database based upon 1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle, 2003;TlP;Frei & Stelger, 1991;Chen, 1992;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TlP;Frei & Stelger,	computerized scaren.	
1982;Frisse, 1988;Salton, 1963;Kochtanek, 1982;Gelbart, 1991;Croft, 1993;Goffman, 1969;Pinski, 1976;Garner, 1967;Alain, 1992;Shepherd, 1990;Guinan, 1992;Salton, 1988;Nielsen, 1990;Burt, 1991;Lucarella, 1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew, 1986;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada 1991;Intermedia;Chen Thesis, 1992;ENVISION;SMART  [26b] creating a first numerical representation for each identified object in the database based upon the object's direct relationship with other objects in the database;  1982;Frisse, 1988;Salton, 1967;Alain, 1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew, 1986;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada 1991;Intermedia;Chen Thesis, 1992;ENVISION;SMART  Kessler, 1967;Salton, 1971;Garfield, 1979;Fox/Smart, 1983;Fox Collections, 1983;Fox Thesis, 1983;Fox, 1984;Fox, 1985;Armstrong, 1988;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle & Croft, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Stelger,		
1969;Pinski, 1976;Garner, 1967;Alain, 1992;Shepherd, 1990;Guinan, 1992;Salton, 1988;Nielsen, 1990;Burt, 1991;Lucarella, 1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew, 1986;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada 1991;Intermedia;Chen Thesis, 1992;ENVISION;SMART  [26b] creating a first numerical representation for each identified object in the database based upon the object's direct relationship with other objects in the database;    1969;Pinski, 1976;Garner, 1967;Alain, 1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew, 1986;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada 1991;Intermedia;Chen Thesis, 1992;ENVISION;SMART    Kessler, 1967;Salton, 1971;Garfield, 1979;Fox/Smart, 1983;Fox Collections, 1983;Fox Thesis, 1983;Fox, 1984;Fox, 1986;Armstrong, 1988;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle, 2 Croft, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Stelger,		
[26b] creating a first numerical representation for each identified object in the database based upon the object's direct relationship with other objects in the database;  1989;UCINET, 1992;Belew, 1986;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada 1991;Intermedia;Chen Thesis, 1992;ENVISION;SMART  Kessler, 1967;Salton, 1971;Garfield, 1979;Fox/Smart, 1983;Fox Collections, 1983;Fox Thesis, 1983;Fox, 1984;Fox, 1985;Armstrong, 1988;Fox, 1988;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle & Croft, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Stelger,		
[26b] creating a first numerical representation for each identified object in the database based upon the object's direct relationship with other objects in the database;  1991;Intermedia;Chen Thesis, 1992;ENVISION;SMART  Kessler, 1967;Salton, 1971;Garfield, 1979;Fox/Smart, 1983;Fox Collections, 1983;Fox Thesis, 1983;Fox, 1984;Fox, 1985;Armstrong, 1986;Fox, 1988;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle & Croft, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Stelger,		
each identified object in the database based upon the object's direct relationship with other objects in the database;  Thesis, 1983;Fox, 1984;Fox, 1985;Armstrong, 1988;Fox, 1988;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle & Croft, 1991;Shaw Part II, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Stelger,		1991;Intermedia;Chen Thesis, 1992;ENVISION;SMART
the object's direct relationship with other objects in the database;  1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle & Croft, 1991;Shaw Part II, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger,	each identified object in the database based upon the object's direct relationship with other objects in	
the database;  1991;Dunlop, 1991;Turtle, 1991;Turtle & Croft, 1991;Shaw Part I, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger,		
Ine database; 1991;Chen, 1992;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger,		1991:Dunlop, 1991:Turtle, 1991:Turtle & Croft, 1991:Shaw Part I, 1991:Shaw Part II.
	: .	

	*	
* .		
, ,		
		1968;Tapper, 1982;Frisse, 1988;Salton, 1963;Kochtanek, 1982;Gelbart, 1991;Croft,
		1993;Goffman, 1969;Pinski, 1976;Garner, 1967;Botafogo, 1992;Shepherd,
	r u	1990;Schiminovich, 1971;Guinan, 1992;Salton, 1988;Nielsen, 1990;Burt, 1991;Lucarella,
	6 12	1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew, 1986;Rose, 1991;Pirolli,
" I	, .	19996;Bichteler & Parsons, 1974;Rada, 1991;Intermedia;Chen Thesis, 1992; Weiss, 1996;
	•	ENVISION;SMART
	[26c] storing the first numerical representations for	Salton, 1971; Garfield, 1979; Fox/Smart, 1983; Fox Collections, 1983; Fox Thesis, 1983; Fox,
,	use in computerized searching;	1984;Fox, 1985;Armstrong, 1988;Fox, 1988;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins,
1	use in computerized searching;	1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle,
	€.	1991; Turtle & Croft, 1991; Shaw Part I, 1991; Shaw Part II, 1991; Chen, 1992; Betrabet,
		1993;Brunel, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger, 1992;Shimko, 1974;Bichteler
	` ' <u>'</u>	& Eaton, 1977;Salton, 1970;Salton and McGill, 1983;Salton, 1968;Tapper, 1982;Frisse,
		1988;Salton, 1963;Kochtanek, 1982;Geibart, 1991;Croft, 1993;Goffman, 1969;Pinski,
	* "	1976;Garner, 1967;Botafogo, 1992;Shepherd, 1990;Schlminovich, 1971;Guinan,
	*	
	an g	1992;Salton, 1988;Nielsen, 1990;Burt, 1991;Lucarella, 1990;U.S. Pat. No. 5,446,891;Rose,
381		1989;UCINET, 1992;Belew, 1986;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada,
		1991;Intermedia;Chen Thesis, 1992; Weiss, 1996; ENVISION;SMART
	[26d] analyzing the first numerical representations	Salton, 1971;Garfield, 1979;Fox/Smart, 1983;Fox Collections, 1983;Fox Thesis, 1983;Fox,
	for indirect relationships existing between or among	1984;Fox, 1985;Armstrong, 1988;Fox, 1988;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins,
	objects in the database;	1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle,
* * *	organia in the minimum,	1991;Turtle & Croft, 1991;Shaw Part I, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet,
		1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger, 1992;Shimko, 1974;Bichteier
	grift x	& Eaton, 1977;Salton, 1970;Salton and McGill, 1983;Salton, 1968;Tapper, 1982;Frisse,
		1988;Salton, 1963;Kochtanek, 1982;Gelbart, 1991;Croft, 1993;Goffman, 1969;Pinski,
	* *	1976;Garner, 1967;Botafogo, 1992;Shepherd, 1990;Schiminovich, 1971;Guinan,
		1992;Salton, 1988;Nielsen, 1990;Burt, 1991;Lucarella, 1990;U.S. Pat. No. 5,446,891;Rose,
		1989;UCINET, 1992;Belew, 1986;Salton, 1975;Rose, 1991;Pirolli, 19996;Bichteler &
		Parsons, 1974;Rada, 1991;Intermedia;Chen Thesis, 1992; Weiss, 1996; ENVISION;SMART
	[26e] generating a second numerical representation	Salton, 1971; Garfield, 1979; Fox/Smart, 1983; Fox Collections, 1983; Fox Thesis, 1983; Fox,
	of each object based on the analysis of the first	1984;Fox, 1985;Armstrong, 1988;Fox, 1988;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins,
!	numerical representation;	1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle,
	maniorion representation,	1991;Turtle & Croft, 1991;Shaw Part I, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet,
		1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger, 1992;Shimko, 1974;Bichteler
		& Eaton, 1977;Salton, 1970;Salton and McGill, 1983;Salton, 1968;Tapper, 1982;Frisse,
		1988;Salton, 1963;Kochtanek, 1982;Croft, 1993;Goffman, 1969;Pinski, 1976;Garner,
		1967;Botafogo, 1992;Shepherd, 1990;Schiminovich, 1971;Guinan, 1992;Salton, 1988;Burt,
	* .	1991;Lucarella, 1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew,
	* A <sub>4</sub>	1986;Salton, 1975;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada,

		1991;Intermedia;Chen Thesis, 1992; Welss, 1996; ENVISION;SMART
	[26f] storing the second numerical representation for use in computerized searching; and	;Salton, 1971;Garfield, 1979;Fox/Smart, 1983;Fox Collections, 1983;Fox Thesis, 1983;Fox, 1984;Fox, 1985;Armstrong, 1988;Fox, 1988;Croft, 1989;Croft, Lucia, 1989;Flsse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle & Croft, 1991;Shaw Part I, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet,
ž		1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger, 1992;Shimko, 1974;Bichteler & Eaton, 1977;Salton, 1970;Salton and McGill, 1983;Salton, 1968;Tapper, 1982;Frisse, 1988;Salton, 1963;Kochtanek, 1982;Gelbart, 1991;Croft, 1993;Goffman, 1969;Pinski, 1976;Garner, 1967;Botafogo, 1992;Shepherd, 1990;Schiminovich, 1971;Guinan,
. "	[26g] searching the objects in the database using a	1992;Salton, 1988;Nielsen, 1990;Burt, 1991;Lucarella, 1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew, 1986;Salton, 1975;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada, 1991;Intermedia;Chen Thesis, 1992; Weiss, 1996; ENVISION;SMART Salton, 1971;Garfield, 1979;Fox/Smart, 1983;Fox Collections, 1983;Fox Thesis, 1983;Fox,
	computer and the stored second numerical representations, wherein the search identifies one or more of the objects in the database.	1984;Fox, 1985;Armstrong, 1988;Fox, 1988;Croft, 1989;Croft, Lucia, 1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle & Croft, 1991;Shaw Part I, 1991;Shaw Part II, 1991;Chen, 1992;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Frei & Steiger, 1992;Shimko, 1974;Bichteler
		& Eaton, 1977;Salton, 1970;Salton and McGill, 1983;Salton, 1968;Tapper, 1982;Frisse, 1988;Salton, 1963;Kochtanek, 1982;Gelbart, 1991;Croft, 1993;Goffman, 1969;Pinski, 1976;Garner, 1967;Alain, 1992;Shepherd, 1990;Schiminovich, 1971;Guinan, 1992;Salton, 1988;Burt, 1991;Lucarella, 1990;U.S. Pat. No. 5,446,891;Rose, 1989;UCINET, 1992;Belew,
	27. The non-semantical method of claim 26,	1986;Salton, 1975;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada, 1991;Intermedia;Chen Thesis, 1992; Weiss, 1996; ENVISION;SMART Kessler, 1967;Salton, 1971;Garfield, 1979;Fox/Smart, 1983;Fox Collections, 1983;Fox Thesis, 1983;Fox, 1984;Fox, 1985;Armstrong, 1988;Fox, 1988;Croft, 1989;Croft, Lucia,
	wherein the objects in the database include words, and semantic indexing techniques are used in combination with the non-semantical method, the method further comprising the step of creating and storing a Boolean word index for the words of the objects in the database.	1989;Frisse/Cousins, 1989;Thompson, 1989;Kommers, 1990;Nielsen, 1990b;Berk, 1991;Dunlop, 1991;Turtle, 1991;Turtle & Croft, 1991;Shaw Part I, 1991;Shaw Part II, 1991;Betrabet, 1993;Brunei, 1993;Bourne and Hahn, 2003;TIP;Shimko, 1974;Salton, 1970;Salton and McGill, 1983;Salton, 1968;Tapper, 1982;Frisse, 1988;Salton, 1963;Kochtanek, 1982;Gelbart, 1991;Croft, 1993;Goffman, 1969;Alain, 1992;Shepherd, 1990;Schiminovich, 1971;Guinan, 1992;Salton, 1988;Lucarella, 1990;Rose, 1989;Belew, 1986;Rose, 1991;Pirolli, 19996;Bichteler & Parsons, 1974;Rada, 1991;Intermedia;Chen
	28. The non-semantical method of claim 26 wherein the first and second numerical representations are vectors that are arranged in first and second matrices;	Thesis, 1992; Weiss, 1996; ENVISION; SMART  Salton, 1971; Fox/Smart, 1983; Fox Collections, 1983; Fox Thesis, 1983; Fox, 1984; Fox, 1985; Armstrong, 1988; Fox, 1988; Croft, Lucia, 1989; Frisse/Cousins, 1989; Thompson, 1989; Kommers, 1990; Berk, 1991; Dunlop, 1991; Turtle, 1991; Turtle & Croft, 1991; Shaw Part I, 1991; Shaw Part II, 1991; Betrabet, 1993; Frei & Steiger, 1992; Shimko, 1974; Salton, 1970; Salton and McGill, 1983; Salton, 1968; Tapper, 1982; Salton, 1963; Gelbart, 1991; Croft,